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APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
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DES MOINES IA 50309-4076

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

☒ Responsive to communication(s) filed on December 21, 1998 and June 16, 1999.

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 11 - 32 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 11 - 32 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

– SEE OFFICE ACTION ON THE FOLLOWING PAGES –

★ U.S. GPO: 1996-410-238/40050

1. Amendment A filed June 16, 1999 has been received and entered into the record.

Claims 11-32 are pending in the case.

All 35 U.S.C. statutes not cited in this Office action can be found cited in full in a previous Office action.

35 USC 112, Second Paragraph Rejection

2. Claims 13, 14, 16, 17, 20, 21, 23, 24, 26, 27, 29 and 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 13, 14, 16, 17, 20, 21, 23, 24, 26, 27, 29 and 30, at the beginning of each claim, the term "A" should be changed to ---The---.

3. Applicant's arguments with respect to claims 13, 14, 16, 17, 20, 21, 23, 24, 26, 27, 29 and 30 have been considered but are moot in view of the new ground(s) of rejection.

35 USC 103(a) Rejection

4. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Caboche (US Patent No. 5,651,829).

Applicants claim a modified maltitol crystals, being bipyramidal in form comprising two regular tetrahedrons juxtaposed by their square section base with sides of 50 to 500 μm approximately, thus constituting regular octahedrons with edge length of approximately 50 to 500 μm. It is noted on page 3, first paragraph of the specification that by controlling the maltotriitol content of the maltitol syrup, it was possible to direct the form of the maltitol crystals towards one or other of the forms or towards a mix of the two forms (bipyramidal or prismatic) when the maltitol syrup is subjected to a crystallization stage. See page 6, lines 9-19 of the instant specification wherein the crystalline maltitol composition is constituted by maltitol crystals of

bipyramidal form when the maltotriitol content, by weight of dry matter, is less than 1% and a maltitol content of greater than or equal to 87%.

Caboche discloses a crystalline maltitol composition having a maltitol concentration which is at least equal to 92% (see column 4, lines 35-37). Caboche further disclose that the composition according to the invention contains a low content of polyols other than maltitol, such polyols include sorbitol, xylitol, mannitol, iditol, arabitol, maltotriitol or maltotetraitol. Caboche discloses that the content of these polyols is preferably less than 2% in relation to the dry matter of the composition (see column 4, lines 44-50). See example 1 of the Caboche patent wherein crystalline maltitol compositions are prepare by dissolving maltitol crystals having a maltitol concentration of 99.8%. See the Table in column 10 of the Caboche patent wherein this composition disclosed in example 1, designated as I1, only discloses traces amount for the content of polyols other than maltitol. The instant claims differ from the Caboche patent by disclosing the maltitol crystals as being bipyramidal in form. The maltitol crystals of the Caboche patent appears to be within the scope of the maltitol crystals of the instant invention since the maltitol crystals of the Caboche patent sets forth an maltitol and maltotriitol content which is analogous to the maltitol and maltotriitol content describe in the specification and claims for a maltitol crystal to have the bipyramidal form. Accordingly, it would have been obvious to one having ordinary skill in the art at the time of applicant(s) invention to employ a maltitol crystal having a maltitol content of greater than or equal to 87% and a maltotriitol content of less than 1 % as disclosed in the Caboche patent in order to meet the criteria of maltitol crystals being in bipyramidal form in view of their closely related structures and the resulting expectation of similar properties as an additive for food.

5. Applicant's arguments with respect to claims 11-14 have been considered but are moot in view of the new ground(s) of rejection.

6. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kataura et al (European Patent No. 741140) in view of Caboche (US Patent No. 5,651,829).

Applicants claim a manufacturing process of a composition comprising liquefaction of a starch slurry, saccharification of the slurry to obtain a maltose hydrolysate containing 87% by weight of maltose, filtration and de-mineralization of the maltose hydrolysate, hydrogenation of the maltose hydrolysate to obtain a maltitol syrup having a maltitol content greater than or equal to 87% and a maltotriitol content lower than 1% by weight of dry matter, crystallization of the syrup and separation of the formed maltitol crystals.

Kataura et al disclose the production of crystalline maltitol comprising catalytically hydrogenating a maltose syrup containing 81-90 wt.% of maltose and chromatographing the resulting sugar alcohol syrup on a column of cation-exchange resin to obtain a maltitol syrup whose solids can comprise 99.9 wt.% maltitol whereby the maltitol syrup may be concentrated and crystallized, and separating the crystalline maltitol from the mother liquor (see English language abstract). The instant claims differ from the Kataura et al reference by reciting that the maltitol crystals are of bipyramidal form. The maltitol syrup whose solids comprises 99.9 wt.% maltitol is within the scope of a maltitol crystal having a bipyramidal form since a 99.9 wt.% maltitol content suggests a maltotriitol content of less than 1%. The availability of a maltitol composition having maltitol content greater than or equal to 87% and a maltotriitol content lower than 1% by weight is further characterized in the Caboche patent wherein Caboche discloses a crystalline maltitol composition having a maltitol concentration which is at least equal to 92% (see column 4, lines 35-37). Caboche further disclose that the composition according to the invention contains a low content of polyols other than maltitol, such polyols include sorbitol, xylitol, mannitol, iditol, arabitol, maltotriitol or maltotetraitol. Caboche discloses that the content of these polyols is preferably less than 2% in relation to the dry matter of the composition (see column 4, lines 44-50). See example 1 of the Caboche patent wherein crystalline maltitol compositions are prepare by dissolving maltitol crystals having a maltitol concentration of 99.8%. See the Table in column 10 of the Caboche patent wherein this composition which is described in example 1, designated as I1, only discloses traces amount for the content of polyols other than maltitol. It would have been obvious to substitute into the Kataura et al process the maltitol crystal having a concentration of 99.8% and traces amount of maltotriitol, as taught by the

Caboche patent, for the crystalline maltitol of the Kataura et al reference to obtain a crystalline maltitol composition of bipyramidal form as suggested in the Caboche patent.

7. Applicant's arguments with respect to claims 15-17 have been considered but are moot in view of the new ground(s) of rejection.

8. Claims 18-32 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Devos et al (US Patent No. 4,846,139) for the reasons already of record on pages 6 and 7 of the Office action filed March 15, 1999.

9. Applicant's arguments filed June 16, 1999 have been fully considered but they are not persuasive. Applicants argue that the maltitol composition of the Devos et al patent comprise at least 1.5% of other impurities in addition to maltotriitol that may lead to other non-determinable crystalline forms. However, this argument is not persuasive since the Devos et al patent sets forth a maltitol and maltotriitol content which meet the criteria for forming the crystalline forms recited in the instant claims.

10. All the claims are rejected.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to E. White whose telephone number is (703) 308-4621. The examiner can normally be reached on Monday-Friday from 8:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Kunz, can be reached on (703) 308-4623. The fax phone number for this Group is (703) 308-4556.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-1235.

E. White
White
August 30, 1999

Gary L. Kunz
GARY L. KUNZ
PRIMARY EXAMINER
GROUP 1200